



## (U) Hurricane Harvey: Infrastructure Impact Assessment: Texas Dams – 2100 EDT 25 August 2017

### (U) Assessment

(U) OCIA assesses that Hurricane Harvey will have moderate to high local impacts and low national impacts to the Dams Sector. The greatest potential cause of impacts to dams is extended periods of heavy inland rainfall. The National Hurricane Center Advisory 22, released at 1700 EDT, August 25, 2017, expects catastrophic flooding across the middle and upper Texas coast from heavy rainfall of 15 to 30 inches, with isolated amounts as high as 40 inches, through Wednesday, August 30, 2017.

(U//FOUO) OCIA flood modeling identified 25 high hazard dams with maximum storage capacities greater than 5,000 acre-feet are located in areas estimated to have flood inundation over 4 feet (figure 2). The majority of these dams are used for recreational purposes.

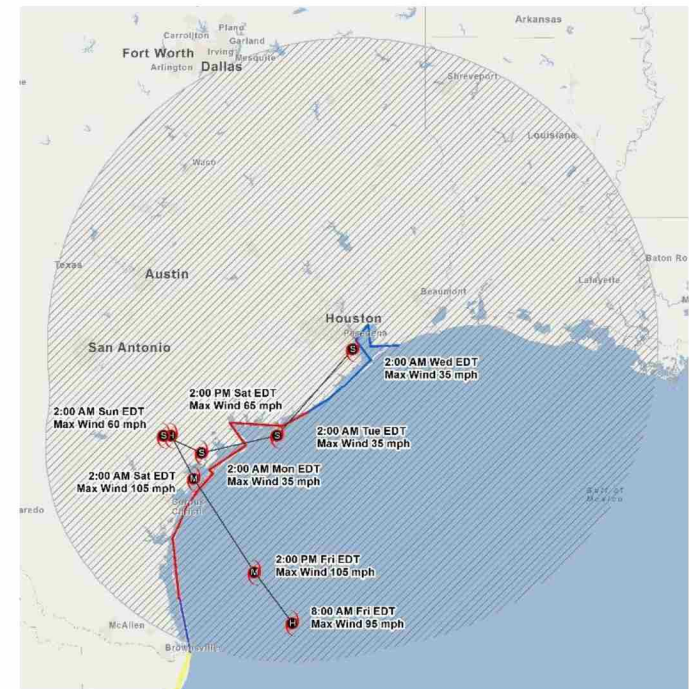
(U) Near-real time reservoir water levels from the Texas Water Development Board indicate that 32 of the 121 monitored reservoirs are currently at 100 percent of their capacity, as of August 25, 2017. The majority of these reservoirs are located in the eastern and northeastern parts of the State. These sites are at higher risk of being overwhelmed as heavy rainfall persists into next week. Due to recent high levels of rainfall, flood control dams (which may not normally hold water) are expected to have at or close to near-full pools, making them susceptible to overtopping.

(U//FOUO) The flooding impact to downstream communities from a failure is largely dependent on the local topography. OCIA maintains a library of dam failures in order to provide first responders with necessary impact information should a dam fail.

(U) Extreme rainfall amounts may contribute to runoff volumes greater than the storage capacity of a reservoir. For this reason, dam operators generally release water before a major hurricane to increase the amount of runoff the dam can handle. Earth and rock-filled dams have a greater risk of failure under these conditions because they are more susceptible to failures caused by liquefaction, erosion, and seepage, compared to steel or concrete dam types.

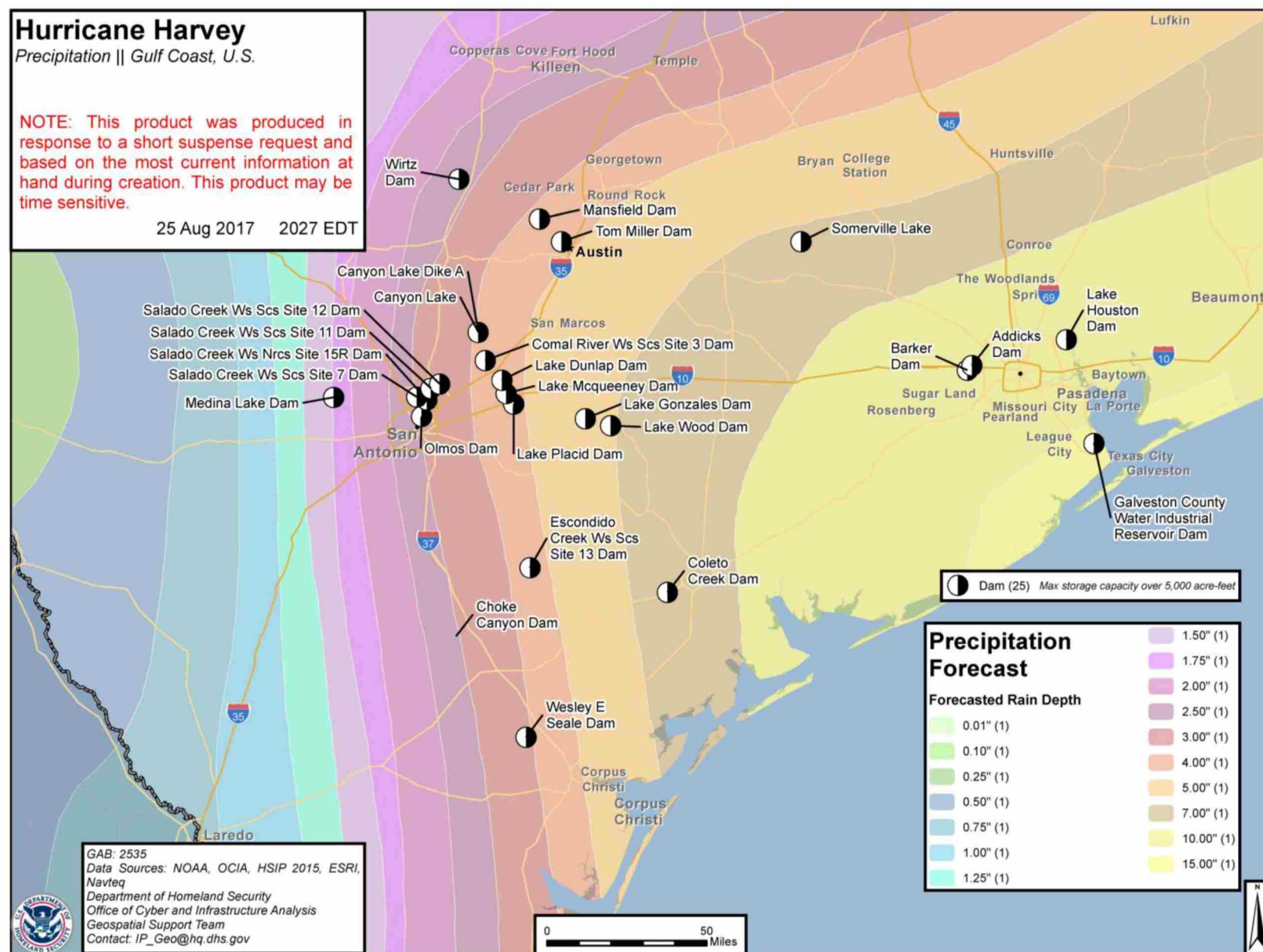
(U) OCIA assesses that no dams are of particular concern due to power outages.

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(U//FOUO) FIGURE 1— HURRICANE HARVEY TRACK

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(U//FOUO) FIGURE 2— HIGH HAZARD DAMS WITH A STORAGE CAPACITY GREATER THAN 5,000 ACRE-FEET AND NOAA 1-7 DAY PRECIPITATION FORECAST (25AUG17).

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**NPPD Customer Feedback Survey**

**1. Product Title:** Hurricane Harvey - Dams

**2. Please rate your satisfaction with each of the following:**

	Very Satisfied (5)	Somewhat Satisfied (4)	Neither Satisfied Nor Dissatisfied (3)	Somewhat Dissatisfied (2)	Very Dissatisfied (1)
Timeliness of product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relevance of product	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**3. How did you use the product?**

☐ Yes ☐ No Integrated into one of my own organization's information or analytic products  
If so, which products?

☐ Yes ☐ No Used contents to improve my own organization's security or resiliency efforts or plans  
If so, which efforts?

☐ Yes ☐ No Shared contents with government, private sector, or other partners  
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☐ Yes ☐ No Other uses (please specify)

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Yes ☐ No ☐ (Please specify)

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**6. Would you like to see more on this topic?**

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**7. Are there other topics or questions you would like to see addressed by OCIA?**

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Name:	<input type="text"/>	Sector:	<input type="text" value="Select One"/>
Organization:	<input type="text"/>	Partner Type:	<input type="text" value="Select One"/>
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